

CLAIMS

What is claimed is:

1. In a wafer processing system, an electrostatic chuck comprising:
a body having a top surface configured to face a wafer;
5 an electrode buried in the body; and
a reflective coating over the top surface.
2. The electrostatic chuck of claim 1 wherein the top surface includes raised contact points configured to contact the wafer and the reflective coating does not go over the raised contact points.
- 10 3. The electrostatic chuck of claim 1 wherein the reflective coating does not go over portions of the electrostatic chuck that make contact with the wafer.
4. The electrostatic chuck of claim 1 wherein the body is made of a leaky dielectric material.
5. The electrostatic chuck of claim 1 wherein the leaky dielectric material
15 comprises alumina.
6. The electrostatic chuck of claim 1 wherein the reflective coating reflects radiation in an infrared (IR) region.
7. The electrostatic chuck of claim 1 wherein the reflective coating comprises aluminum.
- 20 8. The electrostatic chuck of claim 1 wherein the reflective coating comprises:
a metal layer over the top surface; and

a protection layer over the metal layer.

9. The electrostatic chuck of claim 1 wherein the metal layer comprises aluminum and the protection layer comprises aluminum nitride.

10. A method of supporting a wafer in a wafer processing system, the method
5 comprising:

holding a wafer onto a body of an electrostatic chuck, the wafer having a backside facing the electrostatic chuck; and

reflecting heat from the backside of the wafer off a reflective coating and back onto the backside of the wafer.

10 11. The method of claim 10 wherein heat is reflected off portions of the body that do not contact the wafer.

12. The method of claim 10 wherein the reflective coating comprises a metal.

13. The method of claim 10 wherein the reflective coating comprises a metal over the body and a protective layer over the metal.

15 14. The method of claim 12 wherein the metal comprises aluminum.

15. The method of claim 13 wherein the metal comprises aluminum and the protective layer comprises aluminum nitride.

16. An apparatus for supporting a wafer in a wafer processing system, the apparatus comprising:

20 a body comprising a dielectric material, the body including raised portions configured to contact a wafer;

an electrode buried in the body; and

a reflective coating over portions of the body that do not contact the wafer.

17. The apparatus of claim 16 wherein the reflective coating comprises a metal.

5 18. The apparatus of claim 16 wherein the reflective coating comprises:
a metal; and
a protective film over the metal.

19. The apparatus of claim 16 wherein the reflective coating comprises two discontinuous sections corresponding to bipolar electrode regions buried in the body.

10 20. The apparatus of claim 17 wherein the metal comprises sputtered aluminum.